COURSE SPECIFICATION

BEng (Hons) Engineering Geology & Geotechnics

Academic Standards, Quality and Partnerships
Department of Student and Academic Administration

March 2018

COURSE SPECIFICATION

Please refer to the Course Specification Guidance Notes for guidance on completing this document.

Course Title	***BEng (Hons) Engineering Geology & Geotechnics***
Final Award	*BEng (Hons)*
Exit Awards	*CertHE, DipHE, BEng, BEng (Hons)*
Course Code / UCAS code (if applicable)	*C2036*
Mode of study	*full time, part time, placement*
Mode of delivery	*Campus*
Normal length of course	*3 years, 4 years with placement*
Cohort(s) to which this course specification applies	*from September 2019 intake onwards*
Awarding Body	*University of Portsmouth*
Teaching Institution	*University of Portsmouth*
Faculty	*Faculty of Science & Health*
School/Department/Subject Group	*School of Environment, Geography & Geosciences*
School/Department/Subject Group webpage	*Full URL*
Course webpage including entry criteria	https://www.port.ac.uk/study/courses/beng-hons-engineering-geology-and-geotechnics
Professional and/or Statutory Regulatory Body accreditations	*Geological Society of London, Institute for Materials, Minerals and Mining*
Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level	*level 6*

This course specification provides a summary of the main features of the course, identifies the aims and learning outcomes of the course, the teaching, learning and assessment methods used by teaching staff, and the reference points used to inform the curriculum.

This information is therefore useful to potential students to help them choose the right course of study, to current students on the course and to staff teaching and administering the course.

Further detailed information on the individual modules within the course may be found in the relevant module descriptors and the Course Handbook provided to students on enrolment.

Please refer to the Module Web Search for further information on the course structure and modules.

Educational aims of the course

Aims to equip students to work as applied geoscientists or within relevant alternative employment:

- *To train scientists to have a sound knowledge and understanding of the nature of engineering geology and geotechnics*
- *To develop an awareness of the particular strategies needed to work in the field of engineering geology and geotechnics*
- *To train students of engineering geology and geotechnics with a specialist knowledge of specific aspects of applied geosciences, such as rock and soil mechanics, site and ground investigation techniques, computer applications in engineering geology including risk analysis and assessment, GIS and remote sensing, contaminated land, tunnel and underground excavation design, landslides and slope stabilisation and rock engineering, soil foundation engineering and hydrogeology.*
- *To offer students the opportunity to undertake an optional work placement year with an appropriate employer to develop confidence and work-place skills together with an appreciation of the application of theory to practice.*

In addition, and more generally, the course aims to:

- *Provide a stimulating, wide ranging yet integrated programme in the applied geosciences.*
- *Develop critical, analytical, practical, professional, research and communication skills and prepare students for postgraduate study and / or professional qualifications.*
- *Develop the skills necessary for life-long independent learning and acquisition of knowledge*
- *Provide a challenging, stimulating and self-rewarding study environment.*
- *Develop a range of key skills by opportunities provided in the study units and work placements.*
- *Maximise student career potential through industrial liaison, use of external industry speakers and the work placement and enable them to develop knowledge, understanding and skills in their chosen subject area.*

Course Learning Outcomes and Learning, Teaching and Assessment Strategies

The Quality Assurance Agency for Higher Education (QAA) sets out a national framework of qualification levels, and the associated standards of achievement are found in their Framework for Higher Education Qualifications document.

The Course Learning Outcomes for this course are outlined in the tables below.

A. Knowledge and understanding of:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
A1	The evolution, structure, composition and nature of the Earth, including the mechanical behaviour of natural and man-made materials. In addition, the processes that control the evolution of the Earth's crust at different temporal and spatial scales and their relationship to human activities	Lectures, practicals and fieldwork. A systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of a discipline. Develops subject knowledge, critical thinking; plus analytical, observational and interpretational skills; communication skills using text and graphics. The exercise of initiative and personal responsibility. Decision-making in complex and unpredictable contexts. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 7, 8, 10 and 11.	Exam; coursework; lab books, field notebooks, maps and log sheets. Formative assessment can be via weekly feedback in practical classes and test questions on the intranet.

A2	Methods of geological data acquisition and analysis, and he principles of stratigraphy and the relationships between rock bodies	Lectures, practicals and fieldwork. A systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of a discipline. Develops subject knowledge, critical thinking; plus analytical, observational and interpretational skills; communication skills using text and graphics. The exercise of initiative and personal responsibility. Decision-making in complex and unpredictable contexts. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 7, 8, 10 and 11.	Exam; assessed coursework that takes the form of technical reports, coursework reports, fieldwork reports, laboratory reports and oral presentations appropriate to particular units; field notebooks, maps and log sheets.
A3	The complexity and cyclicity of energy, water and materials in Earth systems.	Blended learning using combinations of formal lectures, seminars, problem based workshops are used to provide core knowledge and to develop the major themes, theories, concepts, issues and evidence in a given area of study. Aligns to Hallmarks 1, 2, 3, 4, 5, 8, 10.	Unseen closed-book examination and in-class tests
A4	The need for a multi-disciplinary and interdisciplinary approach in both acquiring and advancing knowledge and understanding of Engineering Geology and Geotechnics. Demonstrate the application of Engineering Geology and Geotechnics knowledge and skills to a task or problem completed in a workplace context.	Lectures, practicals and fieldwork. A systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of a discipline. Develops subject knowledge, critical thinking; plus analytical, observational and interpretational skills; communication skills using text and graphics. The exercise of initiative and personal responsibility. Decision-making in complex and unpredictable contexts. Knowledge and understanding is advanced and consolidated during work for the final-year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 10 and 11.	Assessed coursework that takes the form of technical reports, coursework reports, fieldwork reports, laboratory reports and oral presentations appropriate to particular units. Reflective portfolio & work placement diary assess the Industrial Placement.
A5	Advanced mathematical principles related to the physical world	Lectures, practicals and fieldwork. A systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of a discipline. Develops subject knowledge, critical thinking; plus analytical, observational and interpretational skills; communication skills using text and graphics. The exercise of initiative and personal responsibility. Decision-making in	Unseen closed-book examination and in-class tests

		complex and unpredictable contexts. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 10.	

B. Cognitive (Intellectual or Thinking) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
B1	Plan, conduct and report on a programme of original research at undergraduate level including the formulation and testing of hypotheses. In addition be creative and innovative in the analysis and solution of problems in Engineering Geology or Geotechnical Engineering.	Structured tutorials at Levels 4 and 5. Student-centred activities such as reviews, case studies and independent research for the final year project. Problem based and experiential learning strategies. The year long long Industrial Placement. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 10 and 11.	Integrated technical reports where students have to solve complex Geoscience problems primarily in Level 5 and 4. Final year projects that require longer periods of intellectual reflection. Presentations where intellectual ideas have to be translated into visually attractive images and explanations. Reflective portfolio and work placement diary assess the Industrial Placement.
B2	Select and apply appropriate scientific, laboratory, mathematical and computer-based methods and principles in the analysis and solution of problems in Engineering Geology or Geotechnical Engineering. Work with confidence from basic principles and apply essential applied Geoscience techniques to unfamiliar situations.	Problem based and experiential learning strategies. The year long Industrial Placement. Student-centred activities such as reviews, case studies and independent research for the final year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 9, 10 and 11.	Formal examinations require time-limited intellectual responses. Final year projects that require longer periods of intellectual reflection. Presentations where intellectual ideas have to be translated into

			visually attractive images and explanations. Reflective portfolio and work placement diary assess the Industrial Placement.
B3	Estimate and scope the scale of Engineering Geology or Geotechnical Engineering problems and the solutions to the problems identified. Be able to conceptualise the interplay between investigation, testing and modelling in an Engineering Geology or Geotechnical Engineering context.	Seminar and group discussions and team activities as part of the IDE. The year long Industrial Placement. Student-centred activities such as reviews, case studies and independent research for the final year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 9, 10 and 11.	*Final year projects that require longer periods of intellectual reflection. Presentations where intellectual ideas have to be translated into visually attractive images and explanations. Reflective portfolio and work placement diary assess the Industrial Placement.*
B4	*Integrate and evaluate relevant information from a variety of sources and recognise legal, moral, ethical and other social issues.*	Seminar and group discussions, Structured tutorials at Levels 4 and 5. The year long Industrial Placement. Student-centred activities such as reviews, case studies and independent research for the final year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 9, 10 and 11.	*Final year projects that require longer periods of intellectual reflection. Integrated Design Exercise. Presentations where intellectual ideas have to be translated into visually attractive images and explanations. Reflective portfolio and work placement diary assess the*

			Industrial Placement.
B5	*Contribute to topical debate on environmental issues relating to the Engineering Geology or Geotechnical Engineering and use specialist knowledge to propagate informed views*	The year long Industrial Placement. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 9, 10 and 11.	*Reflective portfolio and work placement diary assess the Industrial Placement.*

C. Practical (Professional or Subject) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
C1	Collect record and analyse data using appropriate techniques in the field and laboratory. Plan, conduct and report on ground investigations, including the use of secondary data.	Laboratory and field classes are a feature of many units. Industrial placement in Year 3 enhances professional and practical skills. The 20 credits Level 5 unit 'Professional Skills for Geoscientists' embeds professional skills into the curriculum. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 8, 9, 10 and 11.	Completion of a reflective portfolio made during the Industrial Placement in the Industrial Placement Unit. Coursework and fieldwork tasks and reports appropriate to particular units. The final-year project report and presentations.
C2	Undertake field and laboratory investigations in a responsible and safe manner, paying due attention to risk assessment, rights of access, relevant health and safety regulations, and sensitivity to the impact of investigations on the environment and stakeholders.	Laboratory and field classes are a feature of many units. Industrial placement in Year 3 enhances professional and practical skills. The 20 credits Level 5 unit 'Professional Skills for Geoscientists' embeds professional skills into the curriculum. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.	Completion of a reflective portfolio made during the Industrial Placement in the Industrial Placement Unit. Coursework and fieldwork tasks and reports appropriate to particular units. The final-year project report and presentations.
C3	Identify and work towards targets for	Structured tutorial programme at Levels 4 and 5. Industrial placement in Year 3 enhances	Completion of a reflective

	personal, academic and career development.	professional and practical skills. The 20 credits Level 5 unit 'Professional Skills for Geoscientists' embeds professional skills into the curriculum. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.	portfolio made during the Industrial Placement in the Industrial Placement Unit. Coursework and fieldwork tasks and reports appropriate to particular units. The final-year project report and presentations.
C4	Develop an adaptable and flexible approach to study and work, including referencing work in an appropriate manner.	Industrial placement in Year 3 enhances professional and practical skills. The 20 credits Level 5 unit 'Professional Skills for Applied Geoscientists' embeds professional skills into the curriculum. Structured tutorial programme at Levels 4 and 5. Aligns to Hallmarks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.	Completion of a reflective portfolio made during the Industrial Placement in the Industrial Placement Unit. Coursework and fieldwork tasks and reports appropriate to particular units. The final-year project report and presentations.
C5	Develop the skills necessary for self-managed and lifelong learning.	Industrial placement in Year 3 enhances professional and practical skills. The 20 credits Level 5 unit 'Professional Skills for Applied Geoscientists' embeds professional skills into the curriculum. Aligns to Hallmarks 1, 2, 3, 4, 5, 7, 8, 9, 10.	Completion of a reflective portfolio made during the Industrial Placement in the Industrial Placement Unit. Coursework and fieldwork tasks and reports appropriate to particular units. The final-year project report and presentations.

D. Transferrable (Graduate and Employability) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
D1	Communicate appropriately to a variety of audiences in written, verbal and visual forms, using information from a variety of sources. Use the Internet critically as a means of communication and a source of information.	The Industrial Placement in Level 6. The Professional Skills for Applied Geoscientists unit at Level 5. The guided independent work for the final-year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 7, 8, 10.	Examinations. Completion of a reflective portfolio and diary made during the Industrial Placement in the Industrial Placement Unit. A variety of coursework elements comprising computer-based exercises, problem solving exercises, laboratory and field exercises and group work. Many transferable and key skills are assessed in work for the final-year project.
D2	Appreciate issues of sample selection, accuracy, precision and uncertainty during collection, recording and analysis of data in the field and laboratory.	The Industrial Placement in Level 6. Extensive field, laboratory and computer-based elements of teaching in many units. The guided independent work for the final-year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 7, 8, 9, 10.	Examinations. Completion of a reflective portfolio and diary made during the Industrial Placement in the Industrial Placement Unit. A variety of coursework elements comprising computer-based exercises, problem solving exercises, laboratory and field exercises and group work.

			Many transferable and key skills are assessed in work for the final-year project.
D3	Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles. Recognise and respect the views of others and evaluate performance as an individual and a team member.	The Industrial Placement in Level 6. Structured tutorial programme at Levels 4 and 5. The guided independent work for the final-year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 7, 8, 9, 10.	Examinations. Completion of a reflective portfolio and diary made during the Industrial Placement in the Industrial Placement Unit. A variety of coursework elements comprising computer-based exercises, problem solving exercises, laboratory and field exercises and group work. Many transferable and key skills are assessed in work for the final-year project.
D4	Solve numerical problems using both computer and non-computer based techniques.	The Industrial Placement in Level 6. Extensive field, laboratory and computer-based elements of teaching in many units. The guided independent work for the final-year project. Aligns to Hallmarks 1, 2, 3, 4, 5, 7, 8.	Examinations. Completion of a reflective portfolio and diary made during the Industrial Placement in the Industrial Placement Unit. A variety of coursework elements comprising computer-based exercises, problem solving exercises, laboratory and field exercises

			and group work. Many transferable and key skills are assessed in work for the final-year project.
D5	Demonstrate an understanding of how organisations function including aspects such as management structures, business operations and work culture.	Many relevant skills are assessed in the final year project units, particularly the design elements. The Industrial Placement in Level 6. Aligns to Hallmarks 1, 2, 3, 4, 5, 7, 8, 9, 10.	Examinations. Completion of a reflective portfolio and diary made during the Industrial Placement in the Industrial Placement Unit. A variety of coursework elements comprising computer-based exercises, problem solving exercises, laboratory and field exercises and group work. Many transferable and key skills are assessed in work for the final-year project. In addition, the design exercise at L6 will allow students to consider how different organisations might operate and interact to achieve a collective aim.

Academic Regulations

The current University of Portsmouth Academic Regulations will apply to this course.

Support for Student Learning

The University of Portsmouth provides a comprehensive range of support services for students throughout their course, details of which are available at the MyPort student portal.

In addition to these University support services this course also provides support prior to, during and following work-based learning and/or placements (including study abroad). Support includes personal tutors, supervisors and mentors as appropriate. Students will have access to all their usual learning resources while off-campus including course details and handbooks, as well as a range of placement-specific resources and/or handbooks.

Evaluation and Enhancement of Standards and Quality in Learning and Teaching

The University of Portsmouth undertakes comprehensive monitoring, review and evaluation of courses within clearly assigned staff responsibilities. Student feedback is a key feature in these evaluations, as represented in our Policy for Listening to and Responding to the Student Voice where you can also find further information.

The course is accredited by the Geological Society of London and by the Institute of Materials, Minerals and Mining.

Reference Points

The course and outcomes have been developed taking account of:

- University of Portsmouth Curriculum Framework Specification
- University of Portsmouth Education Strategy 2016 - 2020
- University of Portsmouth Code of Practice for Work-based and Placement Learning
- Quality Assurance Agency UK Quality Code for Higher Education
- Quality Assurance Agency Qualification Characteristic Statements
- Quality Assurance Agency Subject Benchmark Statement for **Earth Sciences, Environmental Sciences and Environmental Studies, October 2014.**
- Quality Assurance Agency Framework for Higher Education Qualifications
- Requirements of Professional and/or Statutory Regulatory Bodies: **The Geological Society of London and the IOM3**
- Vocational and professional experience, scholarship and research expertise of the University of Portsmouth's academic members of staff
- National Occupational Standards

Disclaimer

The University of Portsmouth has checked the information provided in this Course Specification and will endeavour to deliver this course in keeping with this Course Specification. However, changes to the course may sometimes be required arising from annual monitoring, student feedback, and the review and update of modules and courses.

Where this activity leads to significant changes to modules and courses there will be prior consultation with students and others, wherever possible, and the University of Portsmouth will take all reasonable steps to minimise disruption to students.

It is also possible that the University of Portsmouth may not be able to offer a module or course for reasons outside of its control, for example, due to the absence of a member of staff or low student registration numbers. Where this is the case, the University of Portsmouth will endeavour to inform applicants and students as soon as possible, and where appropriate, will facilitate the transfer of affected students to another suitable course.

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